The MIT Joint Program on the Science and Policy of Global Change (http://globalchange.mit.edu) integrates natural and social science to produce analyses relevant to global change and energy policy debates. By bringing together both science and policy, the Joint Program provides an independent assessment of the impacts of global change and the expected values of responsive action. The research conducted at the Joint Program is valuable to government agencies, who aim to formulate efficient and effective policies; to industry leaders, who aim to create risk management strategies within national, regional, and global market realities; and to other decision-makers, who value a systemic view of the broad interactions inherent in global change. The effort involves an interdisciplinary group of faculty, staff, and student researchers.

The Joint Program combines the capabilities of two complementary research centers: the Center for Global Change Science (CGCS) (http://catalog.mit.edu/mit/research/center-global-change-science) and the Center for Energy and Environmental Policy Research (CEEPR) (http://catalog.mit.edu/mit/research/center-energy-environmental-policy-research). Resources of the parent centers are strengthened by links to the Marine Biological Laboratory's Ecosystems Center in Woods Hole, MA; the MIT Energy Initiative; and other MIT programs. Cooperative efforts engage the Joint Program with leading research institutions and nonprofit organizations worldwide. Financial support is provided by an international partnership of government, industry and foundation sponsors, and by private donations.

At the heart of the Joint Program’s work lies the MIT Integrated Global System Model (IGSM) framework. Designed to analyze interactions between humans and the Earth system, this comprehensive set of models is used to study the causes, consequences, and solutions to problems that arise from global change. We define global change broadly and consider the unintended impacts of global economic and population growth on natural resource availability, the climate, and air and water quality. The IGSM framework consists primarily of two interacting components: the Economic Projection and Policy Analysis (EPPA) model and the MIT Earth System model. Together they are used to evaluate probabilities, uncertainties, risk, and costs and benefits—information crucial to policy decision making.

Joint Program members communicate research results and interpret policy relevance of analytical work through many professional activities, including publications, workshops, corporate and public briefings, and media interviews. Special briefings from program members have been requested by the US Congress and federal and state agencies, by governmental ministries and international organizations, and by independent research panels. Research findings are also communicated through the MIT Global Change Forum, which brings together representatives of industry, government, international entities, and research groups for analysis and discussion of science and policy aspects of global change, and for independent assessment of studies and policy proposals.

Ronald Prinn, director of the Center for Global Change Science and professor within the Department of Earth, Atmospheric, and Planetary Sciences and John Reilly, senior lecturer in the Sloan School of Management co-direct the program.

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